AMENDMENT TO THE CLAIMS:

The listing of claims will replace all prior versions and listings in the application.

Listing of Claims:

Claims 1-21 (Cancelled)

Claim 22 (Currently Amended): A system for transmitting and receiving ~~time division multiplexer (TDM)~~ one of T1 and E1 control data in a time division multiplexer (TDM) communication network, comprising:

a master control source for providing the TDM control data; ~~and~~

at least one slave TDM multiplexer within the TDM communications network, the at least one slave TDM multiplexer having a plurality of associated data sources and being operative to produce a TDM signal, comprising a plurality of fixed-length frames, ~~comprising~~ each of the plurality of associated data sources being represented by one of a plurality of ~~fixed-length, recurrent~~ time-slots ~~in~~ of equal length that reoccur at a fixed length across each of the plurality of fixed-length frames, ~~frame that are allocated to respective channels associated with the TDM multiplexer~~, a given slave TDM multiplexer comprising:

a transmitter component, having an associated transmit processor, for accepting the TDM control data from the master control source and inserting the TDM control data into at least a portion of one of the ~~channels~~ plurality of fixed-length, recurrent time-slots of equal length in each frame of the plurality of frames ~~associated with~~ the TDM signal ~~such that the control data is transmitted in at least a portion of a recurring time slot in each frame~~; and

a receiver component for extracting the TDM control data from the TDM signal and passing the TDM control data to a local processor~~; and~~

~~a bridging component for relaying TDM control data independently of a local control processor associated with the TDM multiplexer~~.

Claim 23 (Currently Amended): The system of claim 22, the ~~bridging~~ transmitter component comprising a first First In, First Out (FIFO) buffer that buffers incoming TDM control data and the receiver component comprising a second FIFO buffer that buffers outgoing TDM control data such that TDM control data can be relayed across the slave TDM multiplexer without synchronization by the local ~~control~~ processor.

Claim 24 (Previously Presented): The system of claim 22, the TDM control data comprising at least one of configuration data for one of the plurality of multiplexers and status information associated with the TDM communications network.

Claim 25 (Previously Presented): The system of claim 22, further comprising a second communications network comprising a plurality of multiplexers, wherein a slave TDM multiplexer associated with the first communications network is operative to extract TDM data from a TDM signal provided by a preceding slave TDM multiplexer associated with the first communications network, transmit the extracted control data to a successive slave TDM multiplexer associated with the first communications network as part of a TDM signal, and transmit the extracted control data to a multiplexer associated with the second communications network via a secondary communications link, as to create a subnetwork.

Claim 26 (Previously Presented): The system of claim 25, wherein the secondary communications link comprises an RS-232 communications link.

Claim 27 (Previously Presented): The system of claim 22, wherein the transmitter component inserts the TDM control data into a fraction of the fixed, recurring time slots, and the receiver component extracts the TDM control data from the corresponding fraction of the time slot.

Claim 28 (Previously Presented): The system of claim 22, wherein the transmitter component inserts the TDM control data into at least two of the fixed, recurring time slots, and the receiver component extracts the TDM control data from the corresponding at least two time slots.

Claim 29 (Currently Amended): A system for transmitting and receiving time division multiplexer (TDM) control data in a time division multiplexer (TDM) communication network, comprising:

a master control source for providing the TDM control data; and

~~at least one~~ a first slave TDM multiplexer within the TDM communications network~~, communicating via a TDM signal, a given slave TDM multiplexor comprising:~~

~~a transmitter component for accepting~~ that accepts the TDM control data from the master control source and ~~inserting~~ inserts the TDM control data into ~~the~~ a TDM signal;

a second slave TDM multiplexer, comprising a transmitter component having an associated transmit processor and a receiver component having an associated receive processor, that is configured to operate in a bridging mode such that the TDM signal from the first slave multiplexer is received at the receiver component, bridged to the transmitter component, and retransmitted independently of the transmit processor and the receive processor.

a third slave TDM multiplexer ~~a receiver component for~~ that ~~extracting~~ receives the TDM signal from the second slave TDM multiplexer and extracts the TDM control data in the TDM signal ~~and passing the TDM control data to a local processor; and~~

~~a bridging component for connecting the transmitter component directly to the receiver component as to pass passing control data the TDM signal along to the next TDM multiplexer, the bridging component comprising at least one buffer that regulates the flow of data through the bridging component such that the control data can be relayed without synchronization by a local processor~~.

Claim 30 (Previously Presented): The system of claim 29, the TDM control data comprising at least one of configuration data for one of the plurality of multiplexers

and status information associated with the TDM communications network.

Claim 31 (Currently Amended): The system of claim 29, wherein the first slave TDM multiplexer is operative to produce a TDM signal comprising a plurality of fixed-length, recurrent time-slots in each frame that are allocated to respective channels associated with the TDM multiplexer, and the ~~transmitter component~~ first slave TDM multiplexer inserts the TDM control data into at least a portion of one of the channels associated with the TDM signal such that the control data is transmitted in a recurring time slot in each frame.

Claim 32 (Currently Amended): A system according to claim 29, wherein the ~~receiver component~~ first slave TDM multiplexer is operative to perform a serial to parallel conversion of the TDM control data, bit shift the control data as to form at least one control data octet, and provide the at least one control data octet to a buffer.

Claim 33 (Currently Amended): A system according to claim 29, wherein the ~~transmitter component~~ first slave TDM multiplexer is operative to buffer a plurality of control data octets from the master control source, perform a parallel to

serial conversion of the control data, and insert the TDM control data into predetermined data positions within the TDM signal.

Claim 34 (Currently Amended): The system of claim ~~22~~ 29, wherein a first TDM multiplexer operates as a master station and each of the ~~at least one~~ second and third slave TDM ~~multiplexer~~ multiplexers transmit only when stimulated by the first TDM multiplexer, and only one slave TDM multiplexer transmits at a given time.

Claim 35 (Currently Amended): The system of claim ~~22~~ 29, the ~~bridging~~ transmitting component comprising a first First In, First Out (FIFO) buffer that buffers incoming TDM control data and the receiving component comprising a second FIFO buffer that buffers outgoing TDM control data such that TDM control data can be relayed across the second slave TDM multiplexer without synchronization by ~~a local control~~ the transmit processor and the receive processor.

Claim 36 (Currently Amended): A method for distributing time division multiplexer (TDM) control data within a time division multiplexing (TDM) communications network comprising a plurality of TDM multiplexers, comprising:

generating TDM control data, comprising at least one of configuration data for one of the plurality of multiplexers and status information associated with the TDM communications network, at a master control source;

receiving the TDM control data at a first TDM multiplexer;

inserting at least a portion of the received control data into a TDM signal at the first TDM multiplexer;

receiving the TDM signal at a second TDM multiplexer that is configured to operate as a repeater;

retransmitting the TDM control signal concurrently with evaluation of its content at a local processor associated with the second TDM multiplexer, such that the TDM signal is retransmitted in a substantially unaltered form regardless of its content; and

extracting the TDM control data from the TDM signal at a ~~second~~ third TDM multiplexer and providing the TDM control data to a TDM multiplexer control processor associated with the ~~second~~ third TDM multiplexer.

Claim 37 (Previously Presented): The method of claim 36, further comprising:

buffering the TDM control data at the second TDM multiplexer, wherein the TDM control data is received at a first data rate; and

transmitting to the TDM control data to a third TDM multiplexer at a second data rate that is different from the first data rate.

Claim 38 (Previously Presented): The method of claim 36, wherein inserting at least a portion of the received control data into the TDM signal comprises inserting control data into one of a plurality of fixed-length, recurrent time-slots in a given frame of the TDM signal, such that the TDM control data is transmitted on a data channel associated with the TDM signal.

Claim 39 (Cancelled)

Claim 40 (Currently Amended): The method of claim 36, further comprising transmitting the TDM control data received at the first TDM multiplexer to a ~~third~~ fourth multiplexer associated with a second communications network.

Claim 41 (Previously Presented): The method of claim 36, wherein receiving the TDM control data at a first TDM

multiplexer comprises communicating with the master control source via an RS-485 protocol.